

What is claimed is:

1. An image processing apparatus comprising:
an input unit receiving a plurality of
pixel data;
a controlling unit selecting a desired
5 transform from among discrete wavelet transform
and discrete cosine transform, and providing a
plurality of coefficients depending on said
desired transform; and
a processing unit which processes said
10 pixel data using said plurality of coefficients
to achieve said desired transform.
2. The image processing apparatus according to
claim 1, wherein said input unit includes:
a storage unit storing said pixel data; and
a rearrangement unit receiving and
5 rearranging said pixel data so as to be adaptive
to said desired transform in response to a
control signal received from said control unit;
wherein said processing unit processes said
rearranged pixel data to achieve said desired
10 transform.
3. The image processing apparatus according to
claim 2, wherein said processing unit includes:
a plurality of adders, each calculating a

sum of two of said rearranged pixel data, said
5 two of said rearranged pixel data being selected
by said rearranged unit;

a plurality of multipliers, each
calculating a product of associated one of said
sums and associated one of said plurality of said
10 coefficients;

an adder/subtractor unit executing
operation on said products received from said
plurality of multipliers to obtain a result data
of said desired transform.

4. The image processing apparatus according to
claim 1, wherein said controlling unit selects
one procedure from among encoding and decoding
through said desired transform, and develops said
5 plurality of coefficients depending on said
selected procedure.

5. The image processing apparatus according to
claim 2, wherein said controlling unit selects
one procedure from among encoding and decoding
through said desired transform, and develops said
5 control signal to allow said rearrangement unit
to be adaptive to said selected procedure.

6. The image processing apparatus according to

claim 1, wherein said controlling unit selects one of an irreversible 9/7 filter and a reversible 5/3 filter to be used when selecting
5 said discrete wavelet transform, and develops said plurality of coefficients depending on said selected filter.

7. The image processing apparatus according to claim 2, wherein said controlling unit selects one of an irreversible 9/7 filter and a reversible 5/3 filter to be used when selecting
5 said discrete wavelet transform, and develops said control signal to allow said rearrangement unit to be adaptive to said selected procedure.

8. The image processing apparatus according to claim 1, wherein said input unit includes:
a plurality of flipflops which respectively stores therein one of said plurality
5 of pixel data,

a rearrangement unit receiving said plurality of pixel data from said plurality of flipflops and rearranging said received pixel data so as to be adaptive to said desired
10 transform in response to a control signal received from said control unit,

wherein said processing unit includes:

a plurality of adders, each receiving
two of said plurality of pixel data selected by
15 said rearrangement unit to calculate a sum of
said received two pixel data,

a plurality of multipliers, each
calculating a product of associated one of said
sums and associated one of said plurality of said
20 coefficients,

another multiplier receiving one of said
plurality of pixel data from one of said
flipflops and calculating a product of said
received pixel data and associated one of said
25 plurality of said coefficients,

a selector; and

an adder/subtractor unit,

wherein said selector selects one of
outputs of said another multiplier and said
30 adder/subtractor unit, and

wherein said adder/subtractor unit executes
operation on said products received from said
plurality of multipliers and an output of said
selector to obtain a result data of said desired
35 transform.

9. An image processing method comprising:
receiving a plurality of pixel data;
selecting a desired transform from among

discrete wavelet transform and discrete cosine
5 transform;

providing a plurality of coefficients
depending on said desired transform; and

processing said pixel data using said set
of coefficients to achieve said desired transform.

10. The image processing method comprising
according to claim 9, further comprising:

rearranging said pixel data so as to be
adaptive to said desired transform, wherein said
5 processing is executed with respect to said
rearranged pixel data to achieve said desired
transform.

11. The image processing method according to
claim 10, wherein said processing includes:

providing pixel data pairs each including
two of said rearranged pixel data,

5 calculating sums of respective pixel data
pairs,

calculating products of said sums and said
plurality of coefficients;

executing operation on said products to
10 obtain a result data of said desired transform.

12. The image processing method according to

claim 9, further comprising:

selecting one procedure from among encoding
and decoding through said desired transform,
5 wherein said plurality of coefficients are
developed depending on said selected procedure.

13. The image processing method according to
claim 10, further comprising:

selecting one procedure from among encoding
and decoding through said desired transform,
5 wherein said rearranging said pixel data is
executed depending on said selected desired
procedure.

14. The image processing method according to
claim 9, further comprising:

selecting one of an irreversible 9/7 filter
and a reversible 5/3 filter to be used when
5 selecting said discrete wavelet transform,
wherein said plurality of coefficients are
developed depending on said selected filter.

15. The image processing method according to
claim 10, further comprising:

selecting one of an irreversible 9/7 filter
and a reversible 5/3 filter to be used when
5 selecting said discrete wavelet transform,

wherein said rearranging is executed
depending on said selected procedure.